ABSTRACT

The present invention is designed for use in the suspension of a vehicle. The invention solves the problem of automatically changing the resistance characteristic of a damper over a wide range, depending on the amplitude of the unevenness of a road surface. The invention makes it possible to reduce the amplitude of oscillations of the sprung mass and to reduce the force acting thereon.

The proposed method consists in that in addition to changing the flow cross section of a channel which couples the cavities of the damper, depending on the difference in the pressure between those cavities, the movement of the damper piston is converted into displacement of a part of the damper, the position of which part affects the size of the flow cross section of the channel. Wherein each position of the piston sets in accordance therewith the position of that part and the size of the flow cross section of the channel which corresponds to a constant pressure difference.

The method may be carried out using a damper which has a movable gate mounted on the piston, the movable gate covering a constant restrictor, or a supply channel of a valve, or a channel through which the pressure difference acts on a closing element of the valve. The damper has an element on which a helical guide (or a straight guide with a variable depth of the profile) is made along the whole stroke of the piston. During movement of the piston the movable gate, interacting with a guide, effects a turn (or movement along the radius of the piston) and changes the corresponding cross section.

The method may be carried out by means of a damper, which has the aforesaid helical guide and a movable support of an elastic valve element, the support being mounted on the piston. The support is coupled to the piston via another helical guide. During movement of the piston the support, interacting with a first guide, turns and moving along a second guide effects linear displacement relative to the piston and changes the elastic deformation of the elastic element of the valve.